

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A transmission device comprising:

a non-linear distortion compensating section for compensating non-linear distortion of an input orthogonal base-band signal that is digitally modulated to form a distortion compensated signal by using non-linear distortion compensating data ~~which compensates the non-linear distortion~~;

a first orthogonal modulator for orthogonally modulating the ~~orthogonal base-band~~ distortion compensated signal received from ~~undergone~~ the non-linear distortion compensating section ~~compensation~~;

a modulation signal distributor for distributing a ~~feedback modulation~~ feedback signal formed by amplifying ~~at~~ the distortion compensated signal orthogonally modulated by the first orthogonal modulator;

a phase/amplitude control section for controlling a phase and an amplitude of at least one of 1) the feedback ~~distributed~~ signal distributed by the modulation signal distributor and 2) a reference signal based on the input orthogonal base-band signal;

a signal combiner for ~~generating~~ combining a combinatory signal based on the ~~feedback distributed~~ signal and the reference signal, at least one of the feedback signal and the reference signal that are provided to the signal combiner being ~~which signals~~ phase and amplitude ~~are~~ controlled by the phase/amplitude control section; and

~~an~~ reference table updating section for updating the non-linear distortion compensating data based on the input orthogonal base-band signal and the combinatory signal provided ~~combined~~ by the signal combiner, the combinatory signal being analog-digital converted prior to being received by the updating section ~~and undergone analog-digital conversion and the orthogonal base-band signal~~.

2. (Currently Amended) -The transmission device of claim 1,

wherein the ~~phase/amplifier-amplitude control~~ section controls ~~a phase-the~~ phase and ~~an-the~~ amplitude of the feedback distributed-signal, and the reference signal is generated by a second orthogonal modulator ~~which-generates-a-reference modulation-signal-by~~ orthogonally modulating the input orthogonal base-band signal,

wherein the ~~reference-table-updating~~ section updates the non-linear distortion compensating data by using the input orthogonal base-band signal and ~~one-of-a~~ demodulated signal obtained by an orthogonal demodulator which one of 1) orthogonally demodulates the analog-digital converted combinatory signal ~~undergone the-analog-digital-conversion-before-outputting-and-a-demodulated-signal-obtained-by an-orthogonal-demodulator-which-provides-and 2) provides~~ the combinatory signal with analog-digital conversion and before-outputting orthogonally demodulates the combinatory signal.

3. (Currently Amended) The transmission device of claim 2, wherein at least one of the ~~distributed-feedback~~ signal supplied to the phase/amplitude control section from the modulation signal distributor and ~~a-signal~~ the reference signal supplied to the signal combiner from the second orthogonal modulator is provided with ~~has-undergone-a~~ frequency conversion.

4. (Original) The transmission device of claim 3 further comprising a reference table for storing the non-linear distortion compensating data.

5. (Currently Amended) The transmission device of claim 3, wherein the ~~device includes, instead of the reference-table updating section,~~ includes a compensation coefficient calculator for calculating the non-linear distortion compensating data with a computing equation and a computing coefficient updating section for updating a coefficient of the computing equation.

6. (Original) The transmission device of claim 2 further comprising a reference table for storing the non-linear distortion compensating data.

7. (Currently Amended) The transmission device of claim 2, wherein the ~~device includes, instead of the reference-table-updating section[[,]]~~ includes a

compensation coefficient calculator for calculating the non-linear distortion compensating data with a computing equation and a computing coefficient updating section for updating a coefficient of the computing equation.

8. (Currently Amended) The transmission device of claim 1,

wherein the reference signal is ~~created~~generated by a second orthogonal modulator ~~which generates a reference modulation signal by orthogonally modulating the input orthogonal base-band signal,~~

wherein the phase/amplitude control section controls ~~a phase~~the phase and ~~an~~the amplitude of the reference ~~modulation signal provided from the second orthogonal modulator;~~

wherein the ~~reference table~~updating section updates the non-linear distortion compensating data by using the input orthogonal base-band signal and ~~one of a~~one of 1) demodulated signal obtained by an orthogonal demodulator which ~~one of 1)~~orthogonally demodulates the analog-digital converted combinatory signal undergone the analog-digital conversion and a demodulated signal obtained by an orthogonal demodulator which and 2) provides the combinatory signal with analog-digital conversion ~~and before orthogonally demodulates the combinatory signal~~outputting.

9. (Currently Amended) The transmission device of claim 8, wherein at least one of ~~a distributed~~the feedback signal supplied to the phase/amplitude control section from the modulation signal distributor, a phase and amplitude controlled signal supplied from the phase/amplitude control section to the signal combiner, and ~~a signal~~the reference signal supplied from the second orthogonal modulator to the signal combiner is provided with ~~has undergone~~ a frequency conversion.

10. (Original) The transmission device of claim 9 further comprising a reference table for storing the non-linear distortion compensating data.

11. (Currently Amended) The transmission device of claim 9, wherein the ~~device includes, instead of the reference table updating section,~~updating section includes a compensation coefficient calculator for calculating the non-linear distortion

compensating data with a computing equation and a computing coefficient updating section for updating a coefficient of the computing equation.

12. (Original) The transmission device of claim 8 further comprising a reference table for storing the non-linear distortion compensating data.

13. (Currently Amended) The transmission device of claim 8, wherein the ~~device includes, instead of the reference table updating section, a~~ includes a compensation coefficient calculator for calculating the non-linear distortion compensating data with a computing equation and a computing coefficient updating section for updating a coefficient of the computing equation.

14. (Currently Amended) The transmission device of claim 1 further comprising:

an orthogonal demodulator for one of 1) orthogonally demodulating the ~~analog-digital converted~~ combinatory signal ~~undergone the analog-digital conversion, then outputting a resultant signal and~~ 2) ~~providing converting the combinatory signal with analog-digital conversion and undergone orthogonally demodulating the combinatory signal~~ demodulation, then outputting a resultant signal; and

an adding circuit for adding the input orthogonal base-band signal and the demodulated signal supplied from the orthogonal demodulator,

wherein the ~~reference table updating section~~ updates the non-linear distortion compensating data by using an output from the adding circuit and the input orthogonal base-band signal.

15. (Currently Amended) The transmission device of claim 14, wherein an amplitude of the input orthogonal base-band signal ~~to be being added~~ to the adding circuit is controlled ~~its amplitude~~.

16. (Currently Amended) The transmission device of claim 1, wherein the feedback signal is orthogonally demodulated and the signal combiner combines the ~~distributed-orthogonally demodulated feedback signal orthogonally demodulated and~~ the reference signal into [[a]]the combinatory signal.

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17. (New) The transmission device of claim 1, further comprising a reference table for storing the non-linear distortion compensating data,

wherein the updating section includes a reference table updating section for updating the reference table.